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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,605	05/24/2001	Terry L. Gilton	MICRON.091DVI	4627

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EXAMINER

MACARTHUR, SYLVIA

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 04/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/864,605

Applicant(s)

GILTON ET AL.

Examiner

Sylvia R MacArthur

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/24/01 *JM*
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3-5. 6) ☐ Other: _____

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 26, 28-30, 48, 50, and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Borden et al (US 4,894,529).

Borden teaches a pipe 13 (substrate). Samples of the liquid are drawn through an inlet or orifice 12 (first means) by the intake of a pump 4 (third means) and flows through a pipe 7 (second means) through an inlet port 2 into a nebulizer 1. "Configured to isolate a portion of a wafer" is considered intended use. The teachings of Borden clearly anticipate the present invention as an apparatus is what it is and not what it is does and is not limited to a specific substrate.

Regarding claim 28, Borden is inherently capable of dispensing an etchant.

3. Claims 26-30, 32, 39, 47, 48, 50 and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Munson et al (USP 5,783,938).

Munson teaches an apparatus for the quantitative measurement of the corrosivity effect of residues on the surface of electronic circuit assemblies. Fig. 1. illustrates a tube (inner/second tube) 14 that dispenses fluid to the electronic circuit assembly (substrate). The inlet tube is surrounded by retaining ring 15 (outer/first tube) and fluid transfer line (transfer tubing) 27 connected to pump 28. The fluid transfer line 27 provides the residue-containing extraction fluid to test cell 21 (analyzer). A timer (not shown) is used to measure the time to the migration event.

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Fig. 1 illustrates that a retainer ring is configured to isolate portions connected to the transfer tube.

Col. 5 lines 1-5 discuss that the solution is aspirated on and off (nebulizer is inherent in this teaching). Col. 5 lines 53-57 notes that the (flexible) tubing use in the apparatus is Tygon such that contamination and cell wall degradation is minimized or eliminated. Col. 6 lines 32-45 lists various analyzers including a GC-mass spectrometer (the presence of a nebulizer is confirmed with this teaching as GC-mass spectrometer used vaporized samples).

Note, Merriam Webster's Collegiate Dictionary denotes that gas chromatography is chromatography in which a sample mixture is vaporized and injected into a carrier gas moving through a column containing a stationary phase composed of a liquid or particulate solid and is separated into component compounds according to their affinity for the stationary phase.

Regarding claim 28, Munson is inherently capable of dispensing an etchant.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 31, 33, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Munson in view of Shimazaki (US 5,633,172).

The teachings of Munson were discussed above.

Munson fails to teach the use of inductively coupled plasma mass (emissions) spectrometer.

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Shimazaki teaches a method for analyzing an impurity on a semiconductor substrate.

Shimazaki cleans the surface of a semiconductor substrate 12 with an etchant. The substrate is then exposed to HF vapor which dissolves an oxide film 24 as illustrated in Fig. 3C. Very fine droplets 30 containing the impurity are left on the semiconductor substrate 12.

The amount of impurity is measured by an inductively coupled plasma mass spectrometer.

The motivation to use an inductively coupled mass spectrometer is that the measurement allows for the calculation of the concentration level of the impurity per unit area of the measured area.

Thus, it would have been obvious for one to analyze the sample of Munson with the inductively coupled plasma mass (emissions) spectrometer.

6. Claims 34-37, 39, 40-47, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borden in view of Duan (US 6,429,935).

The teachings of Borden were discussed above:

Borden teaches the use of a pump, but fails to teach specifically a peristaltic pump.

Duan illustrates a flowchart in Fig. 3 describing how a liquid stream is monitored and analyzed. Samplings from standard solutions are transported into a nebulizer using a peristaltic pump.

The motivation to use a peristaltic pump is used for its cleanliness. This type of pump prevents or minimizes contamination due to fluid transfer. Merriam Webster's Collegiate Dictionary denotes that this pump operates on the premise that fluid is forced along waves of contraction produced mechanically on flexible tubing.

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Thus, it would have been obvious at the time of the claimed invention to use the system of Borden

7. Claims 34-37, 39, 40-47, 49, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Munson in view of Duan.

The teachings of Munson were discussed above.

Munson teaches the use of a pump, but fails to teach specifically a peristaltic pump.

Duan illustrates a flowchart in Fig. 3 describing how a liquid stream is monitored and analyzed. Samplings from standard solutions are transported into a nebulizer using a peristaltic pump.

The motivation to use a peristaltic pump is used for its cleanliness. This type of pump prevents or minimizes contamination due to fluid transfer. Merriam Webster's Collegiate Dictionary denotes that this pump operates on the premise that fluid is forced along waves of contraction produced mechanically on flexible tubing.

Thus, it would have been obvious at the time of the claimed invention to use the system of Munson.


Conclusion

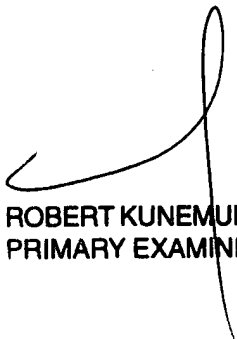
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R MacArthur whose telephone number is 703-306-5690. The examiner can normally be reached on M-F during the core hours of 8 a.m. and 2 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9630.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Sylvia R. MacArthur
March 27, 2003


ROBERT KUNEMUND
PRIMARY EXAMINER